

REMARKS

The Office Action of January 11, 2005 was received and carefully reviewed. Reconsideration and withdrawal of the currently pending rejections are requested for the reasons advanced in detail below.

Claims 50-82 were pending prior to the instant amendment. By this amendment, claims 50-57, 62, 65, 68, 70, 72, 74, 76, 78, and 80 are amended herein to correct inconsistencies therein. As a result, claims 50-82 remain pending in the instant application, of which claims 50, 52, 58, 62, 65, 68, 70, 72, 74, 76, 78, and 80 are independent..

Initially, Applicants acknowledge the courtesies extended to the undersigned and Applicant's representatives in the Examiner's Interview held on April 7, 2005.

Claims 50-53, 56-58, 61, 62, 64, 65, 67, 74-80 and 82 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in combination with YAMADA '179, Inoue et al. '206, So et al. '905 and Garcia et al., Farber et al. '684 and further in view of Satoh et al. and Sakata et al. '584. Reliance upon applicants' admission related to recognition of issues related to moving electro luminescent devices is withdrawn as being cumulative of the teachings of Sakata et al. '584.

Claims 54, 55, 59, 60, 63, 66, 68, 69-73 and 81 are also rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in combination with Yamada '179, Inoue et al. '206, So et al. '905 and Garcia et al. Farber et al., Satoh et al. and further in view of Montgomery et al. These rejections are traversed for the reasons advanced below.

A process of manufacturing an EL device is generally divided into two processes which are manufacturing steps of a thin film transistor and the EL element. In many cases, each of these two processes is independently run at different locations, or even at different companies. Because manufacturing steps, materials used for the processes etc. are quite different between the TFT and the EL element, it is difficult to manufacture the EL device at one room or building, or for that matter even at only one factory. As a result, the TFT may be manufactured in one room and then the EL element is formed in another, or the TFT may be manufactured by one company and then moved to another company to form the EL device.

On the basis of this background, the inventors of the present invention noticed two problems. One is an electrostatic discharge damage of the TFT, and the other is a

contamination of a pixel electrode to be formed with EL layer thereover. Especially, because an EL element is formed by using extremely thin film, mainly thin film including an organic material, an adverse effect of the contamination is a big problem for a reliability of the EL device.

In order to solve these problems, the present invention teaches that a resin insulating film that can ultimately be used to form a bank is formed over a TFT formed over a substrate. In addition, it is taught that a film for preventing the TFT from a contamination and an electrostatic discharge damage is formed over the resin insulating film. Then, a substrate having the TFT is moved to a place where an EL element is formed over the TFT. It is the order of method steps, namely, the formation of the protective film over the resin insulating film that is first formed over the wiring, the first electrode or pixel electrode and the interlayer insulating film prior to movement of the TFT that distinguishes the present invention over the cited art of record. The resin insulating film can ultimately be used to form a bank, which further distinguishes the present invention over the cited art of record since this feature further emphasizes the timing of the formation of the protective film prior to movement of the TFT.

On the other hand, Yamada only discloses a structure of EL device but fails to recognize problems of contamination and an electrostatic discharge damage being caused by moving a TFT.

Inoue discloses performing a plasma treatment for the purpose of removing a residue caused by forming a contact hole. However, in the present invention, an interlayer insulating film is performed with the plasma treatment to cure a surface of the interlayer insulating film, and then a contact hole is formed (claim 80). According to this, release of gas or moisture from a TFT side to an EL element side is prevented. The plasma treatment disclosed by Inoue and that of the present invention are distinguishable each other.

Sakata recognizes a problem of a contamination caused by storing a TFT in one clean room. However, Applicants contend that Sakata does not relate to the case of moving between one room and the other room. This is particularly true since Sakata only appreciates the problems associated with contamination in a room when formed TFT's are stored therein. Sakata solves the problem of a contamination in an entirely different manner by cleaning the air in the clean room using an air filter device.

Sato discloses that a protection layer is formed over a TFT, but only generally. Sato does not recognize a problem that a contamination of a pixel electrode that has an adverse effect toward to an EL element, and particularly the formation of a resin insulating film over the TFT prior to formation of the protective film.

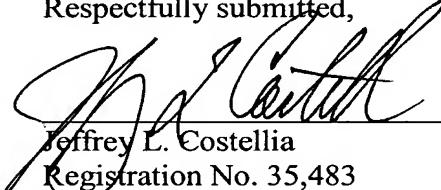
Montgomery merely discloses that a resist is formed over crystallized silicon and further, a charge dissipation layer is formed over the resist. When a TFT is manufactured, there are a lot of steps forming a resist. Montgomery does not disclose a TFT so Montgomery does not recognize the problem of electrostatic discharge damage of TFT

Therefore, Applicant contend that there is no motivation or suggestion of combination with the numerous references cited by the Examiner, namely, Yamada, Inoue, Satoh and Montgomery et al. It is the particular combination of steps and the formation of a protective layer over a resin insulating layer that may be used as a bank in an EL device that makes the instant invention patentably distinct. In addition, Applicants believe that So, Garcia, and Farber fail to overcome the deficiencies of these references. Consequently, Applicants contend that the present invention is distinguishable over the cited art.

In addition to the above, Figures 5B and 5C are amended herein to clearly show that a pixel electrode 944 is included therein.

In view of the foregoing, it is respectfully requested that the rejections of record be reconsidered and withdrawn by the Examiner, that claims 50-82 be allowed and that the application be passed to issue. If a conference would expedite prosecution of the instant application, the Examiner is hereby invited to telephone the undersigned to arrange such a conference.

Respectfully submitted,



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